

Application Serial No. 09/817,446
Amdt. Dated October 21, 2003
Reply to Office Action of July 21, 2003
Attorney Docket No. SAFTY-001BC

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Thrice Amended) An apparatus for non-electrophoretic determination of the presence of at least one analyte in at least one flowable sample, said apparatus comprising:

a housing having a cavity formed therein;

at least one filtrate-receiving vessel positioned within the cavity of the housing, the filtrate-receiving vessel having an open end;

at least one membrane module positioned over the open end of the at least one filtrate-receiving vessel, the at least one membrane module having portions formed of a first hard material and portions formed of a second elastomeric material;

at least one sample-receiving well, each sample-receiving well being positioned in association with one of said membrane components such that sample placed within a particular sample receiving well is filtered through the associated membrane module, and a filtrate which emerges from that membrane module will be received within the associated filtrate-receiving vessel;

a cover for sealing ~~each of said filtrate-receiving vessels and~~ said cavity of said housing, the cover having at least one sample port bounded by a rim extending from the surface of the lid away from the cavity, and wherein the rim is structured to retain the at least one membrane module such that the portions of the at least one membrane module that are formed of elastomeric material interact with the rim to provide substantially air tight sealing between the membrane module and the rim; and

a differential pressure source to cause a pressure differential between each of said sample-receiving wells and each of said filtrate-receiving vessels, said pressure differential

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being operative to drive each sample through the associated membrane module and the resultant filtrate into the associated filtrate-receiving vessel.

2. (Original) The apparatus of Claim 1 wherein said pressure source provides negative pressure within the cavity of said housing so as to pull the filtrate through each membrane component.

3. (Original) The apparatus of Claim 1 wherein said pressure source provides positive pressure within the samples wells so as to push the filtrate through each membrane component.

4. (Previously Amended) The apparatus of Claim 2 further comprising:
at least one air-inlet opening formed in said apparatus, the air inlet openings being associated with each one of said sample-receiving wells, such that when a particular sample-receiving well becomes empty air will be drawn through the associated air inlet opening.

5. (Previously Amended) The apparatus of Claim 1 wherein the differential pressure source comprises a pump which is integral of the apparatus.

6. (Original) The apparatus of Claim 5 wherein said pump integral of the apparatus is a vacuum pump which is incorporated within said housing.

8-66. (Canceled)

67 (Withdrawn) The apparatus according to Claim 1 wherein the at least one membrane module comprises a plurality of membrane modules, and at least two of the membrane modules are configured so as to nest within one another when stacked, thereby ensuring proper alignment of the membrane to allow sample to flow through each sample flow channel.

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68. (Withdrawn) An apparatus for non-electrophoretic determination of the presence of at least one analyte in at least one flowable sample, said apparatus comprising:

a base having a cavity formed therein;

at least one filtrate receiving vessel disposed in the cavity of the base;

a cover sealed over the cavity of the base, the cover comprising at least one sample port disposed over the at least one filtrate receiving vessel to permit filtrate from a sample to flow through the sample port into the filtrate receiving vessel, the at least one sample port surrounded by a rim extending from the cover away from the at least one filtrate receiving vessel; and

at least one membrane module disposed over the rim surrounding the at least one sample port of the cover, the at least one membrane module having a receiving cavity for receiving a sample to be filtered, and a filter for filtering the sample.

69. (Withdrawn) The apparatus of Claim 68 wherein:

the at least one filtrate receiving vessel comprises a plurality of filtrate receiving vessels;

the at least one sample port comprises a plurality of sample ports, each of the sample ports being disposed over a different one of the filtrate receiving vessels;

a plurality of membrane modules, each of the membrane modules being disposed over the rim surrounding a different one of the sample ports; and

wherein the cover further comprises a lid disposed on the receiving cavity of each of the membrane modules.

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70. (Withdrawn) The apparatus of claim 69 wherein the lid comprises an aperture for air flow.

71. (Withdrawn) The apparatus of claim 68 further comprising a port within the base to facilitate a decrease in pressure within the cavity of the base.

72. (Withdrawn) The apparatus of claim 68 further comprising at least one second membrane module nested in the at least one membrane module disposed over the membrane module disposed over the rim surrounding the at least one sample port.

73. (Withdrawn) The apparatus of claim 72 wherein the nested membrane modules are interlockingly engaged with each other.

74. (Withdrawn) The apparatus of claim 68 wherein the receiving cavity of the at least one membrane module comprises a plurality of concentric rings of a hard material and an elastomeric material.

75. (Withdrawn) The apparatus of claim 68 wherein the filter of the at least one membrane module is circumscribed by a ring of an elastomeric material, the ring of elastomeric material is circumscribed by a ring of hard material, and the ring of hard material is circumscribed by a second ring of elastomeric material.

76. (Withdrawn) The apparatus of claim 75 wherein the ring of hard material slopes toward the filtrate receiving vessel from the outer perimeter of the ring of hard material to the inner perimeter of the ring of hard material.

77. (Withdrawn) The apparatus of claim 75 further comprising at least one slot disposed in the ring of hard material and at least one connecting member engageable with a slot disposed on the ring of hard material of another membrane module.

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78. (Withdrawn) An apparatus for non-electrophoretic determination of the presence of at least one analyte in at least one flowable sample, said apparatus comprising:

a base having a cavity formed therein;

at least one filtrate receiving vessel disposed in the cavity of the base;

a cover sealed over the cavity of the base, the cover comprising at least one sample port disposed over the at least one filtrate receiving vessel to permit filtrate from a sample to flow through the sample port into the filtrate receiving vessel;

at least one membrane module disposed over the at least one sample port of the cover, the at least one membrane module having a receiving cavity for receiving a sample to be filtered, and a filter for filtering the sample, wherein the receiving cavity of the at least one membrane module comprises a plurality of concentric rings of a hard material and an elastomeric material; and

a second membrane module nested in the at least one membrane module disposed over the at least one sample port.